IN THE CLAIMS:

These claims will replace all prior versions of claims in the present application.

1. (Previously Presented) A photosensitive resin composition for formation of a spacer layer in an optical disk comprising: two transparent substrates positioned opposite each other; and a recording layer and spacer layer positioned between the opposing sides of the transparent substrates,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and has a glass transition temperature after curing of 100 to 180°C.

2. (Previously Presented) A photosensitive resin composition for formation of a spacer layer in an optical disk comprising: two transparent substrates positioned opposite each other; and a recording layer and spacer layer positioned between the opposing sides of the transparent substrates,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and has a crosslinking density after curing of at least 1100 mmol/L, as calculated by the following formula (1):

$\rho = E'/3\phi RT$ (1)

wherein

ρ is a crosslinking density;

T is a temperature 40°C greater than a temperature at which a maximum value of the loss tangent is exhibited when measuring the dynamic viscoelasticity with varying temperature;

E' is a storage elastic modulus at the temperature T;

ϕ is a front coefficient; and

R is the gas constant.

3. (Previously Presented) A photosensitive resin composition for formation of a spacer layer in an optical disk comprising: two transparent substrates positioned opposite each other; and a recording layer and spacer layer positioned between the opposing sides of the transparent substrates,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

has a glass transition temperature after curing of 100 to 180°C,

and has a crosslinking density after curing of at least 1100 mmol/L, as calculated by the following formula (1):

$\rho = E'/3\phi RT$ (1)

wherein

ρ is a crosslinking density;

T is a temperature 40°C greater than a temperature at which a maximum value of the loss tangent is exhibited when measuring the dynamic viscoelasticity with varying temperature;

E' is a storage elastic modulus at the temperature T;

ϕ is a front coefficient; and

R is the gas constant.

4. (Previously Presented) A photosensitive resin composition for formation of a spacer layer in an optical disk comprising: two transparent substrates positioned opposite each other; and a recording layer and spacer layer positioned between the opposing sides of the transparent substrates,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and the binder polymer comprises an aromatic polycarbonate.

5. (Previously Presented) A photosensitive resin composition according to claim 4,

wherein the glass transition temperature of the photosensitive resin composition after curing is 100 to 180°C.

6. (Previously Presented) A photosensitive resin composition according to claim 4,

wherein the crosslinking density of the photosensitive resin composition after curing is at least 1100 mmol/L, as calculated by the following formula (1):

$\rho = E'/3\phi RT$ (1)

wherein

ρ is a crosslinking density;

T is a temperature 40°C greater than a temperature at which a maximum value of the loss tangent is exhibited when measuring the dynamic viscoelasticity with varying temperature;

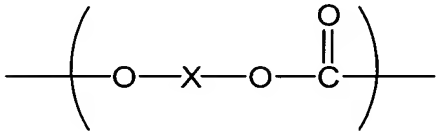
E' is a storage elastic modulus at the temperature T;

ϕ is a front coefficient; and

R is the gas constant.

7. (Previously Presented) A photosensitive resin composition according to claim 4,

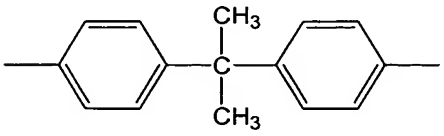
wherein the aromatic polycarbonate is a polymer including a repeating unit represented by the following general formula (1):



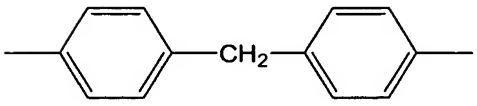
・・・(1)

wherein

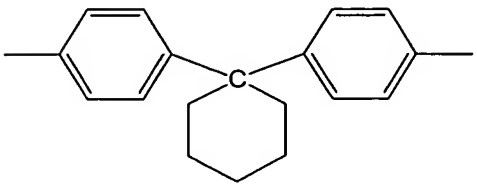
X represents a divalent group represented by formula (2) below, a divalent group represented by formula (3) below or a divalent group represented by formula (4) below.



・・・(2)



・・・(3)



・・・(4)

8. (Previously Presented) A photosensitive resin composition according to claim 4,

wherein the weight-average molecular weight of the aromatic polycarbonate is 10,000 or greater.

9. (Previously Presented) A photosensitive resin composition for formation of a spacer layer in an optical disk comprising: two transparent substrates positioned opposite each other; and a recording layer and spacer layer positioned between the opposing sides of the transparent substrates,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and the binder polymer includes a polymer having an ethylenic unsaturated bond on a side chain.

10. (Previously Presented) A photosensitive resin composition according to claim 9,

wherein the glass transition temperature of the photosensitive resin composition after curing is 100 to 180°C.

11. (Previously Presented) A photosensitive resin composition according to claim 9,

wherein the crosslinking density of the photosensitive resin composition after curing is at least 1100 mmol/L, as calculated by the following formula (1):

$\rho = E'/3\phi RT$ (1)

wherein

ρ is a crosslinking density;

T is a temperature 40°C greater than a temperature at which a maximum value of the loss tangent is exhibited when measuring the dynamic viscoelasticity with varying temperature;

E' is a storage elastic modulus at the temperature T;

ϕ is a front coefficient; and

R is the gas constant.

12. (Previously Presented) A photosensitive resin composition according to claim 9,

wherein the polymer having an ethylenic unsaturated bond on a side chain is a polymer obtained by reacting a carboxyl group-containing polymer with at least one monomer selected from the group consisting of: a hydroxyl monomer having an ethylenic unsaturated bond and a hydroxyl group; and a glycidyl monomer having an ethylenic unsaturated bond and a glycidyl group.

13. (Previously Presented) A photosensitive resin composition according to claim 12,

wherein the carboxyl group-containing polymer is a copolymer of a carboxyl group-containing carboxyl monomer and a monomer which copolymerize with the carboxyl monomer.

14. (Previously Presented) A photosensitive resin composition according to claim 12,

wherein the carboxyl group-containing polymer is a polymer obtained by condensation of a phenoxy resin with a polybasic acid compound.

15. (Previously Presented) A photosensitive resin composition according to claim 12,

wherein the carboxyl group-containing polymer is a polymer obtained by condensation of a hydroxyl polymer including as a monomer unit a hydroxyl monomer having an ethylenic unsaturated bond and a hydroxyl group, with a polybasic acid compound.

16. (Previously Presented) A photosensitive resin composition according to claim 9,

wherein the polymer having an ethylenic unsaturated bond on a side chain is a polymer obtained by reacting a hydroxyl group-containing polymer with at least one monomer selected from the group consisting of: a glycidyl monomer having an ethylenic unsaturated bond and a glycidyl group; and an isocyanate monomer having an ethylenic unsaturated bond and an isocyanate group.

17. (Previously Presented) A photosensitive resin composition according to claim 16,

wherein the hydroxyl group-containing polymer is a phenoxy resin.

18. (Previously Presented) A photosensitive resin composition according to claim 16,

wherein the hydroxyl group-containing polymer is a copolymer of a hydroxyl monomer having an ethylenic unsaturated bond and a hydroxyl group and a copolymerizable monomer which copolymerize with the hydroxyl monomer.

19. (Previously Presented) A photosensitive resin composition according to claim 13,

wherein the carboxyl monomer is a (meth)acrylic acid.

20. (Currently Amended) A photosensitive resin composition according to claim 13 ~~or 18~~,

wherein the copolymerizable monomer is a (meth)acrylic acid ester.

21. (Previously Presented) A photosensitive resin composition according to claim 20,

wherein the (meth)acrylic acid ester is at least one kind of (meth)acrylic acid ester selected from the group consisting of: a (meth)acrylic acid alkyl ester; a (meth)acrylic acid cycloalkyl ester; and a (meth)acrylic acid cycloalkenyl ester.

22. (Currently Amended) A photosensitive resin composition according to claim 12, ~~15 or 18,~~

wherein the hydroxyl monomer is a (meth)acrylic acid hydroxyalkyl ester.

23. (Currently Amended) A photosensitive resin composition according to claim 12 ~~or 16~~,

wherein the glycidyl monomer is a glycidyl (meth)acrylate.

24. (Previously Presented) A photosensitive resin composition according to claim 16,

wherein the isocyanate monomer is an alkyl (meth)acrylate isocyanate.

25. (Currently Amended) A photosensitive resin composition according to ~~any one of claims 1, 2, 3, 4 or 9~~ claim 1,

wherein the content of the photopolymerization initiator is 0.1 to 20 parts by weight with respect to 100 parts by weight as the total of 30 to 90 parts by weight of the binder polymer and 70 to 10 parts by weight of the photopolymerizable compound.

26. (Currently Amended) A photosensitive element comprising:

a support; and

a photosensitive resin composition layer composed of a photosensitive resin composition according to any one of claims 1, 2, 3, 4 or 9 formed on the support.

27. (Previously Presented) A photosensitive element according to claim 26,

wherein the moisture absorption of the photosensitive resin composition layer after curing is no greater than 2%.

28. (Previously Presented) A photosensitive element according to claim 26,

wherein the light transmittance of the photosensitive resin composition layer after curing is 85% or greater.

29. (Previously Presented) A photosensitive element according to claim 26,

wherein the film thickness precision of the photosensitive resin composition layer is ±2 μm.

30. (Previously Presented) A photosensitive resin composition for formation of a transparent protective film or a spacer layer,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound with an ethylenic unsaturated bond; and

a photopolymerization initiator,

and has a glass transition temperature after curing of 100 to 180°C.

31. (Previously Presented) A photosensitive resin composition for formation of a transparent protective film or a spacer layer,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and has a crosslinking density after curing of at least 1100 mmol/L, as calculated by the following formula (1):

$\rho = E'/3\phi RT$ (1)

wherein

ρ is a crosslinking density;

T is a temperature 40°C greater than a temperature at which a maximum value of the loss tangent is exhibited when measuring the dynamic viscoelasticity with varying temperature;

E' is a storage elastic modulus at the temperature T;

ϕ is a front coefficient; and

R is the gas constant.

32. (Previously Presented) A photosensitive resin composition for formation of a transparent protective film or a spacer layer,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

has a glass transition temperature after curing of 100 to 180°C,

and has a crosslinking density after curing of at least 1100 mmol/L, as calculated by the following formula (1):

$\rho = E'/3\phi RT$ (1)

wherein

ρ is a crosslinking density;

T is a temperature 40°C greater than a temperature at which a maximum value of the loss tangent is exhibited when measuring the dynamic viscoelasticity with varying temperature;

E' is a storage elastic modulus at the temperature T;

ϕ is a front coefficient; and

R is the gas constant.

33. (Previously Presented) A photosensitive resin composition used for formation of a protective film or spacer layer,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and the binder polymer comprises an aromatic polycarbonate.

34. (Previously Presented) A photosensitive resin composition used for formation of a protective film or spacer layer,

wherein the photosensitive resin composition comprises:

a binder polymer;

a photopolymerizable compound having an ethylenic unsaturated bond; and

a photopolymerization initiator,

and the binder polymer includes a polymer having an ethylenic unsaturated bond on a side chain.